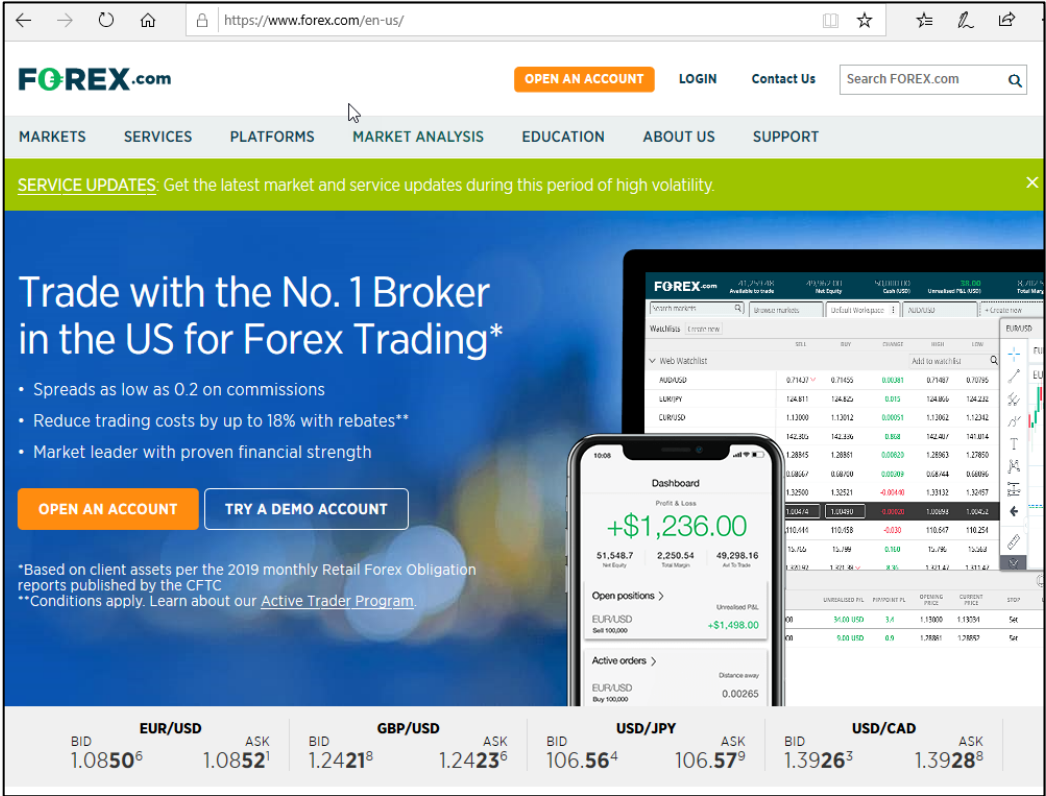


EXHIBIT D

Exhibit D

U.S. Patent 7,146,336

Claim Language	Gain Systems
Claim 1	
1. A system for trading currencies over a computer network, comprising:	<p>Defendants' systems practice this claim. The infringing "systems" include the web-based platform and back end servers, desktop clients, and mobile apps. See Forex.com:</p> 

Oanda Corp. v. GAIN Capital Holdings, Inc.;
GAIN Capital Group, LLC.

Exhibit D

(a) a server front-end in communication with said computer network;

See preamble and other screenshots. See also:

The screenshot displays the FOREX.com account login interface. At the top, the URL is <https://www.forex.com/en-us/account-login/>. The page includes a navigation bar with links for 'Open an Account', 'Contact Us', 'Search FOREX.com', and 'Login'. A green banner at the top reads 'SERVICE UPDATES: Get the latest market and service updates during this period of high volatility.' The main content area is divided into three tabs: 'Web Trading', 'TradingView', and 'MyAccount'. The 'Web Trading' tab is active, showing a login form with 'Username' and 'Password' fields, a 'Remember Username' checkbox, and a 'Forgot Password?' link. A green 'LOG IN' button is at the bottom of the form. Below the form, a link says 'Log into MetaTrader Web'. To the right of the form, a 'Welcome to FOREX.com' message states: 'Securely access and manage your account 24 hours a day, 7 days a week. Don't already have an account? [Open one now.](#)' Below this, a 'Service updates: Turkish lira (TRY) pricing' section explains that due to market volatility, pricing and overnight financing charges on TRY markets may increase. A 'Webinar: Identifying Opportunities & Risk When Trading FX' section invites users to join a webinar to learn how to manage risk during volatility. A 'REGISTER NOW' link with a right-pointing arrow is at the bottom right.

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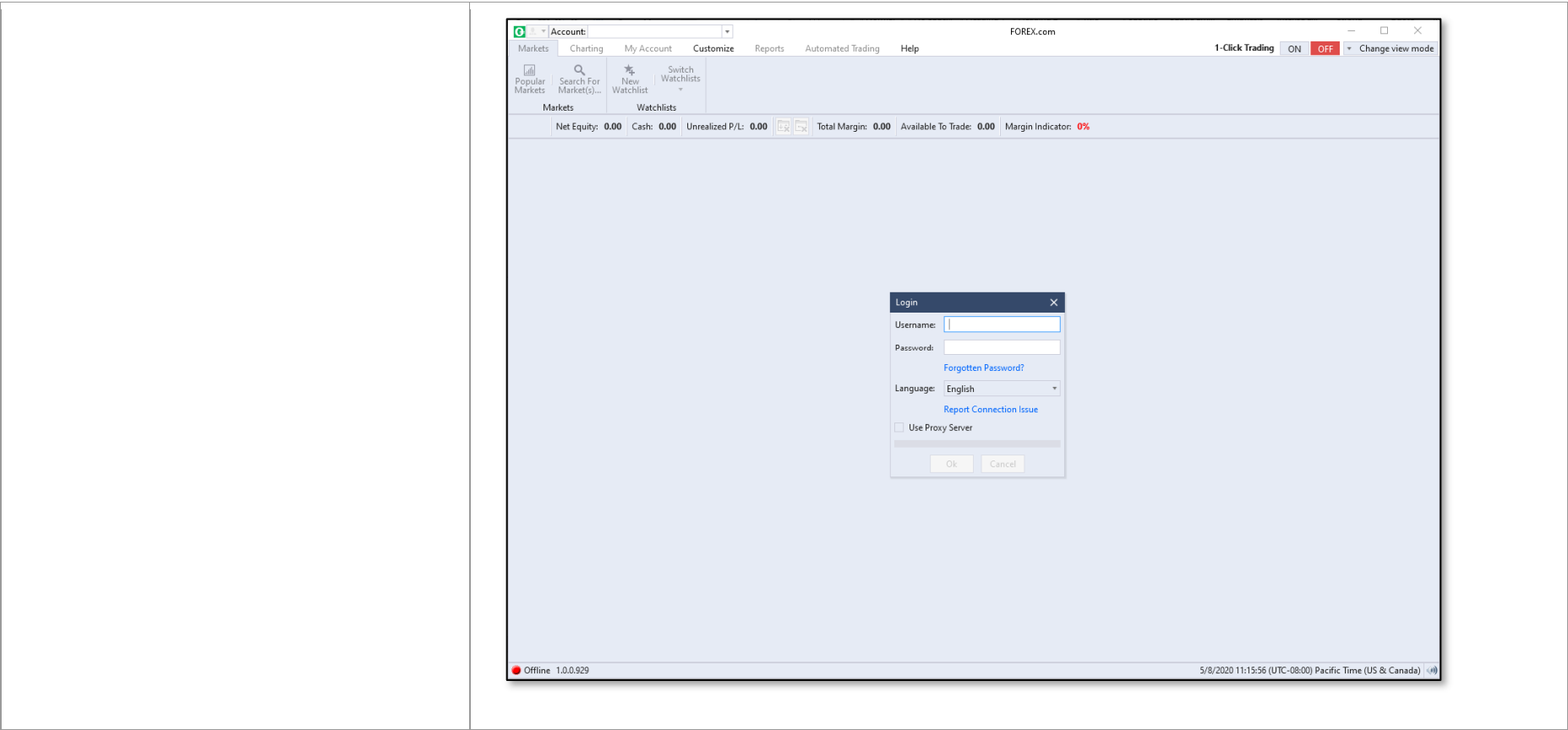


Exhibit D

(b) a database;

See:

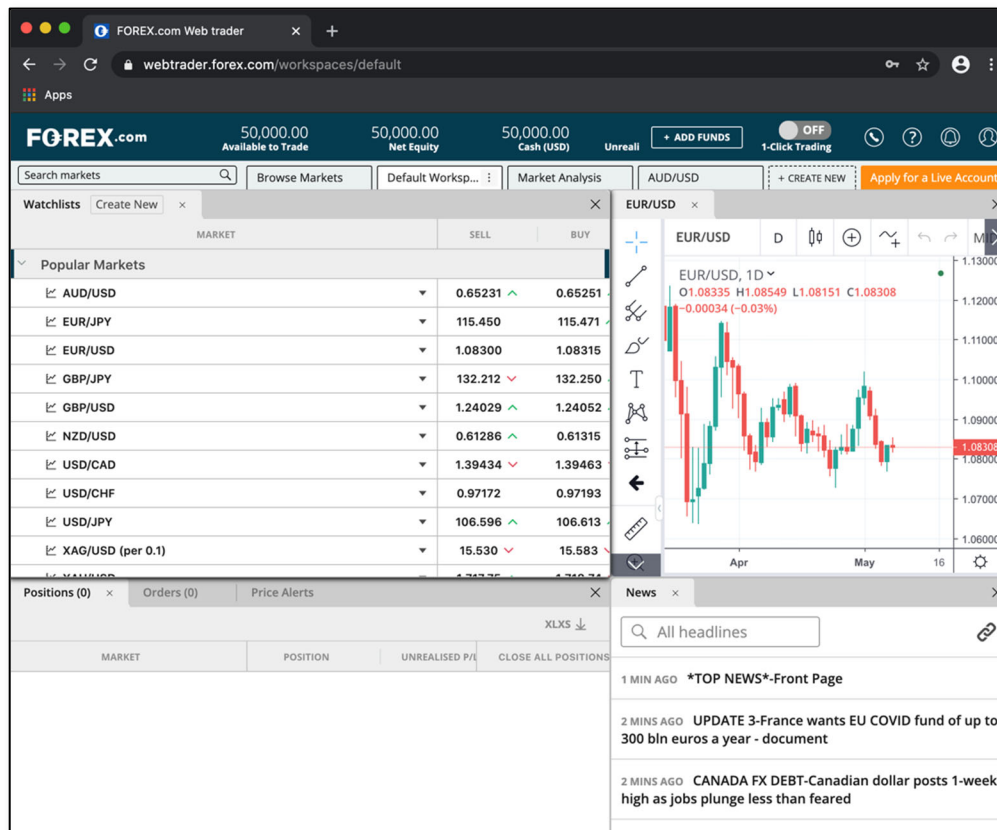


Exhibit D

(c) a transaction server in communication with said server front-end and with said database;

See preamble and other screenshots. See also:

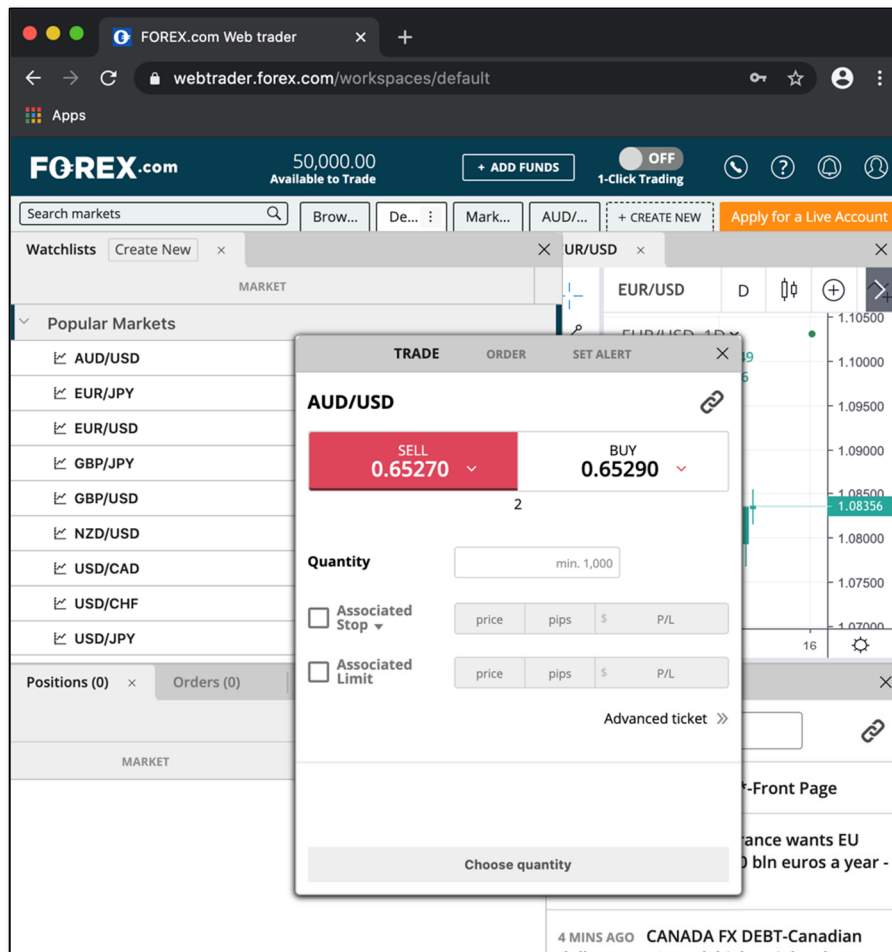


Exhibit D

(d) a rate server in communication with said server front-end; and

See preamble and other screenshots. See also:

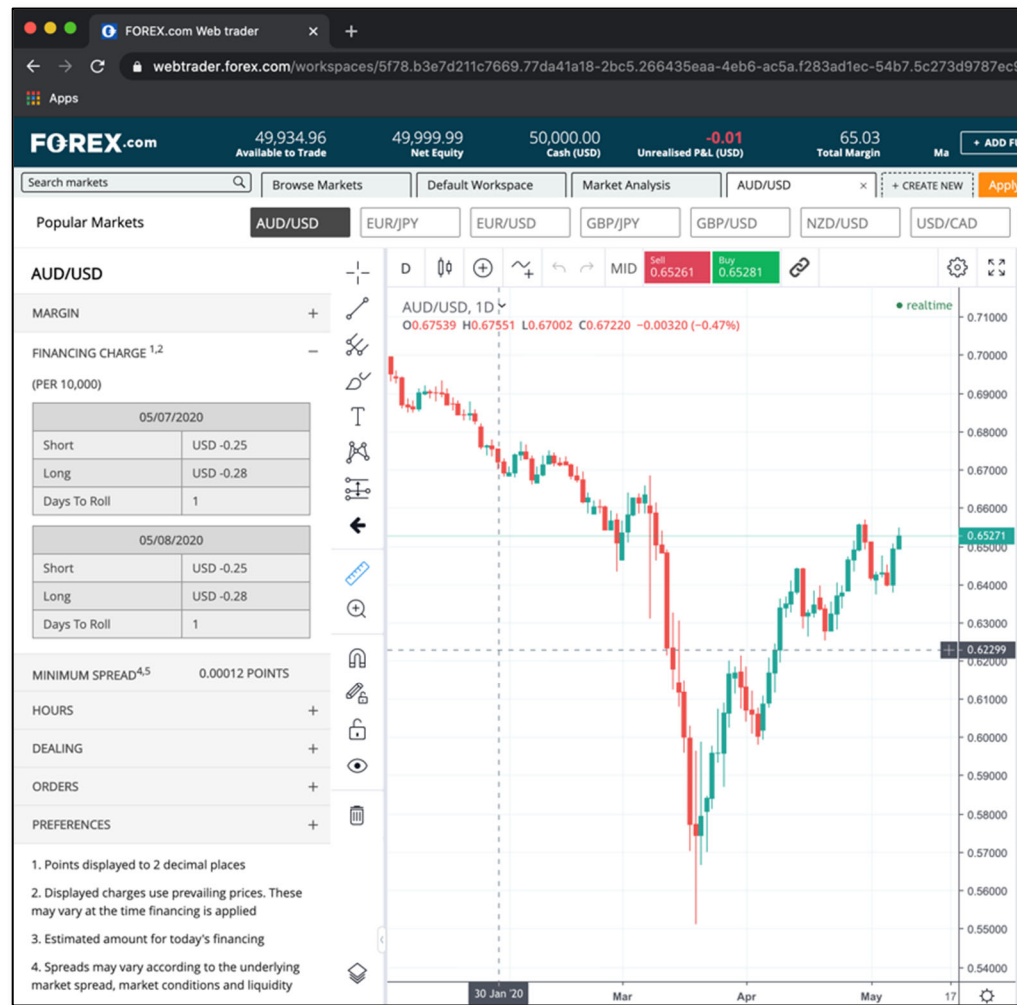
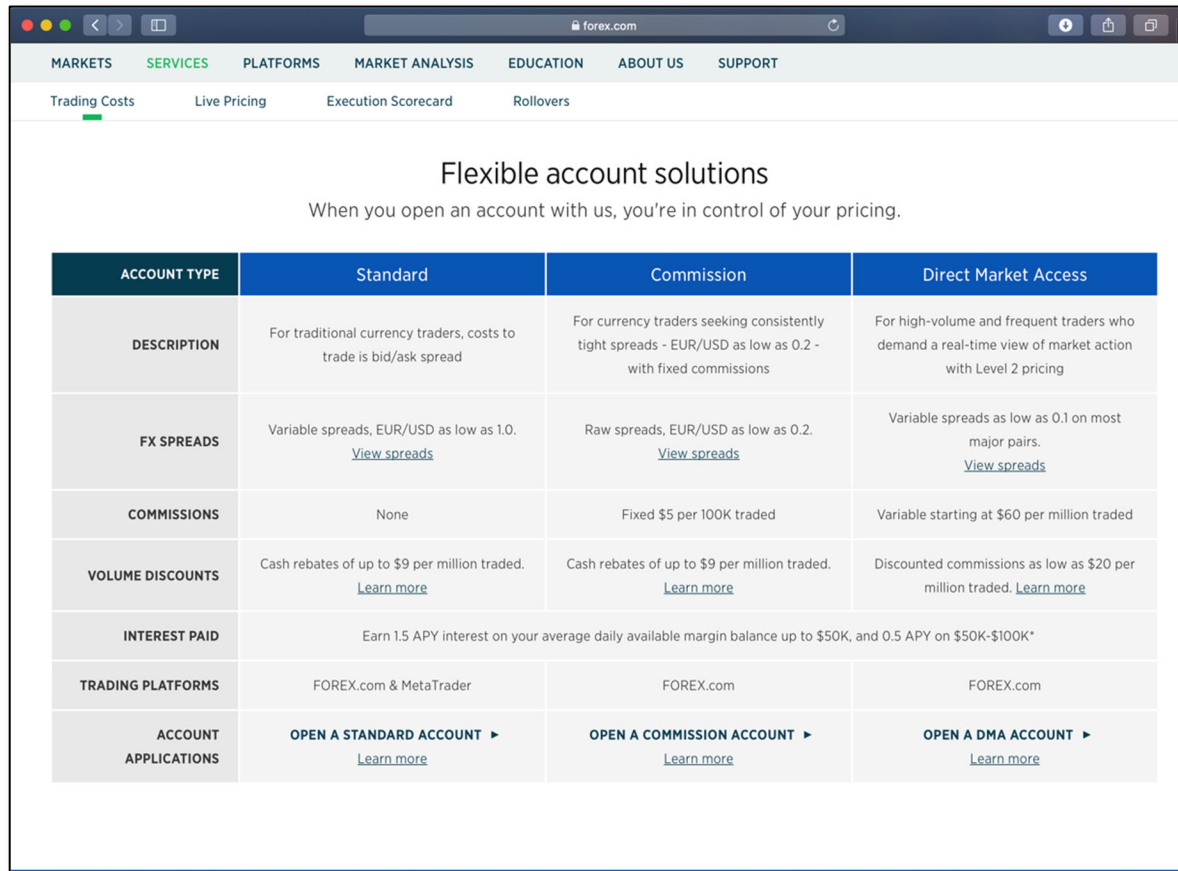


Exhibit D

(e) a pricing engine in communication with said rate server; and further comprising an interest rate manager in communication with said transaction server and said database, wherein said interest rate manager is operative to calculate, pay out, and collect interest on a tick-by-tick basis.

See preamble and other screenshots. *See also:*



The screenshot shows the FOREX.com website with the 'SERVICES' tab selected. The main heading is 'Flexible account solutions' with the subtext 'When you open an account with us, you're in control of your pricing.' Below this is a table comparing three account types: Standard, Commission, and Direct Market Access.

ACCOUNT TYPE	Standard	Commission	Direct Market Access
DESCRIPTION	For traditional currency traders, costs to trade is bid/ask spread	For currency traders seeking consistently tight spreads - EUR/USD as low as 0.2 - with fixed commissions	For high-volume and frequent traders who demand a real-time view of market action with Level 2 pricing
FX SPREADS	Variable spreads, EUR/USD as low as 1.0. View spreads	Raw spreads, EUR/USD as low as 0.2. View spreads	Variable spreads as low as 0.1 on most major pairs. View spreads
COMMISSIONS	None	Fixed \$5 per 100K traded	Variable starting at \$60 per million traded
VOLUME DISCOUNTS	Cash rebates of up to \$9 per million traded. Learn more	Cash rebates of up to \$9 per million traded. Learn more	Discounted commissions as low as \$20 per million traded. Learn more
INTEREST PAID	Earn 1.5 APY interest on your average daily available margin balance up to \$50K, and 0.5 APY on \$50K-\$100K*		
TRADING PLATFORMS	FOREX.com & MetaTrader	FOREX.com	FOREX.com
ACCOUNT APPLICATIONS	OPEN A STANDARD ACCOUNT ► Learn more	OPEN A COMMISSION ACCOUNT ► Learn more	OPEN A DMA ACCOUNT ► Learn more

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The above screenshot, captured from GAIN's product documentation, shows that GAIN charges variable prices to its customers.

The screenshot displays two windows from GAIN's product documentation. The top window, titled 'Get Detailed History', shows a table of transactions with columns: Date, Details, Closing Serial No, Opening Serial No, Action, Is Close By, and Quantity. The bottom window shows a table of positions with columns: Remaining Quantity, Opening Price, Closing Price, Account Ccy, Spread Cost, Realised P&L, Convert Rate, Trade Ccy, and Trade P&L. Below this is a 'Positions (4)' window showing a table of current positions with columns: MARKET, POSITION, UNREALISED P/L, POINT PL, OPENING PRICE, CURRENT PRICE, STOP, LIMIT, MARGIN, and CLOSE ALL POSITION.

Date	Details	Closing Serial No	Opening Serial No	Action	Is Close By	Quantity
	USD AUD/USD			Buy		2000.0000
	USD AUD/USD			Buy		2000.0000
	USD EUR/USD			Buy		2000.0000
	USD USD/CHF FINANCING					
	USD EUR/USD FINANCING					
	USD AUD/USD FINANCING					
	USD USD/CHF			Buy	No	2000.0000
	USD EUR/USD			Sell	No	2000.0000

Remaining Quantity	Opening Price	Closing Price	Account Ccy	Spread Cost	Realised P&L	Convert Rate	Trade Ccy	Trade P&L
2000.0000	0.64130		USD	-0.16			USD	
2000.0000	0.64149		USD	-0.19			USD	
2000.0000	1.08007		USD	-0.13			USD	
0.0000	0.98656		USD		-0.1900	1.02138298	CHF	-0.1840
0.0000	1.11154		USD		-0.1900			
0.0000	0.68985		USD		-0.0800			
0.0000	0.98656	0.98402	USD	-0.93	5.1400	1.01114803	CHF	5.0800
0.0000	1.11154	1.11597	USD	-0.64	8.8600			

MARKET	POSITION	UNREALISED P/L	POINT PL	OPENING PRICE	CURRENT PRICE	STOP	LIMIT	MARGIN	CLOSE ALL POSITION
AUD/USD	Buy 102,000	9,450.18 USD	926.5	0.68044	0.77309	Set	Set	2,365.69	Close All
EUR/JPY	Buy 1,000	136.42 USD	1,483.9	115.497	130.336	Set	Set	47.91	Close
EUR/USD	Sell 1,000	-114.32 USD	-1,143.2	1.08382	1.19814	Set	Set	23.96	Close

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MARKET	SELL	BUY
Popular Markets		
AUD/USD ▼	0.77311	0.77327
EUR/JPY ▼	130.332	130.350
EUR/USD ▼	1.19814	1.19824
GBP/JPY ▼	150.494	150.536
GBP/USD ▼	1.38358	1.38374
NZD/USD ▼	0.71408	0.71438
USD/CAD ▼	1.25053	1.25074
USD/CHF ▼	0.91974	0.91994
USD/JPY ▼	108.776	108.789

(Screenshots captured from GAIN's product user interface showing pricing.)

The above screenshots, showing GAIN's Forex.com product user interface, show prices for various currency pairs. Upon information and belief, GAIN's product comprises a back-end pricing engine that computes the currency trading rates that the traders see and trade upon, for example, the "Sell," "Buy," "Opening" and/or "Closing" prices displayed in the screenshots. GAIN's pricing engine is a back-end component which would not be directly visible in product screenshots. However, its existence is inferred and evidenced by the display of prices in GAIN's product screenshots.

Exhibit D

What is rollover?

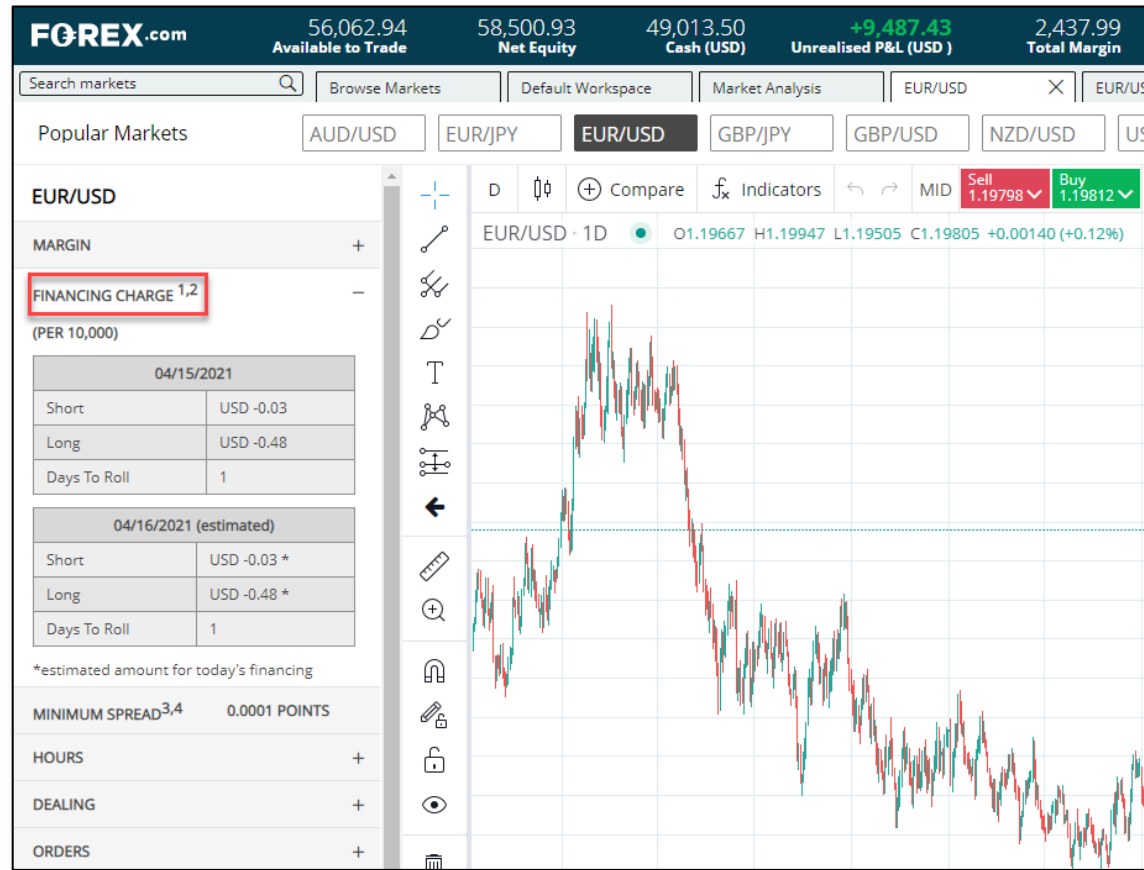
When trading a currency you are borrowing one currency to purchase another. The rollover rate is typically the interest charged or earned for holding positions overnight. A rollover interest fee is calculated based on the difference between the two interest rates of the traded currencies.

[READ MORE](#)

(Screenshot from: <https://www.forex.com/en-us/trading/pricing-fees/rollover-rates/>)

The above screenshot, taken from GAIN's product documentation, explains the concept of "rollover," which is an interest rate that GAIN charges to its customers.

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The above screenshot, taken from GAIN's FOREX.COM trading platform product, shows (on the left in the red box) the pricing of GAIN's "financing charges," which are interest rates that apply to short or long positions, and which are estimated into the future; and (on the right) the pricing of a particular currency pair.

The trading platform also comprises an interest rate manager that computes interest due or owed on a traders' portfolio, and/or that computes interest due to GAIN or payable by GAIN to

Exhibit D

other financial institutions in relation to GAIN's product—for example, banks that loan GAIN currencies.

At this time, without the benefit of discovery, OANDA does not have access to GAIN's back-end systems; however, upon information and belief, GAIN's FOREX.COM trading platform product comprises (and must comprise) the following:

(a) a pricing engine in communication with said rate server, because the FOREX.COM product displays prices, it must contain and use a pricing engine to compute those prices. A pricing engine is a back-end component which would not be visible in screenshots of GAIN's FOREX.COM trading platform product, but will be visible on an inspection of GAIN's source code and associated documentation, and the output of GAIN's product showing prices evidences the existence and use of a pricing engine;

(b) an interest rate manager in communication with said transaction server and said database, because the FOREX.COM product displays interest rates, the product must include software that manages the various interest rates in play on the platform (e.g., different interest rates for different currency pairs, rollover interest rates, margin rates, etc.). An interest rate manager is a back-end component which would not be visible in screenshots of GAIN's FOREX.COM trading platform product but will be visible on an inspection of GAIN's source code and associated documentation. As further evidence of an interest rate manager, the output of GAIN's product (shown above as "Finance Charges") shows interest rates and GAIN's product documentation (shown above as "Rollover Rate") shows that GAIN collects and/or pays interest to its customers. In addition, as the FOREX.COM trading platform product provides currency trading, FOREX.COM's backend must engage in cost-of-capital analysis in order to price its own interest rates, and thus must calculate how much capital it needs, and its costs for obtaining that capital. Finally, as calculated interest is directly related to the underpinning transaction, and the transactions are stored in the database, the interest rate manager is (and must be) in communication with said transaction server and said database; and

Exhibit D

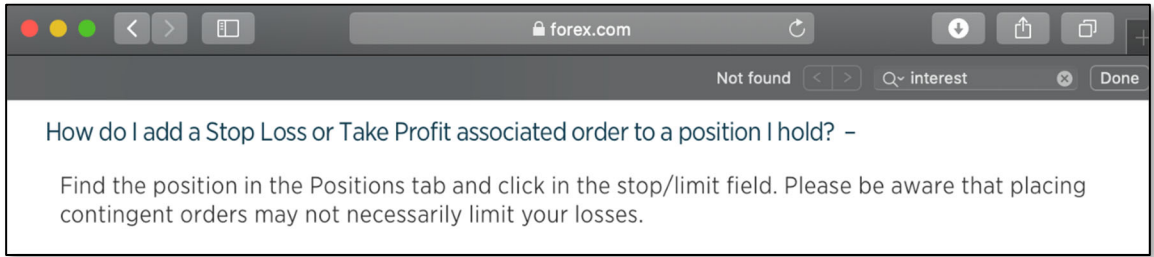
	(c) it is also true (and must be) that the <u>interest rate manager is operative to calculate, pay out, and collect interest on a tick-by-tick basis</u> , because GAIN pays interest to and collects interest from its customers, as well as its funders; and the amounts of interest payable or collectable differ based on changes in prices.
Claim 2	
2. A system for trading currencies over a computer network, comprising:	See preamble to Claim 1.
(a) a server front-end in communication with said computer network;	See Claim 1(a).
(b) a database;	See Claim 1(b).
(c) a transaction server in communication with said server front-end and with said database;	See Claim 1(c).
(d) a rate server in communication with said server front-end; and	See Claim 1(d).
(e) a pricing engine in communication with said rate server; and further comprising a trade manager in communication with said transaction server and said database, wherein said trade manager comprises a stop-loss daemon that (a) continuously checks whether stop-loss orders should be executed, and (b) if a stop-loss order	See Claim 1(e). <i>See also:</i> 

Exhibit D

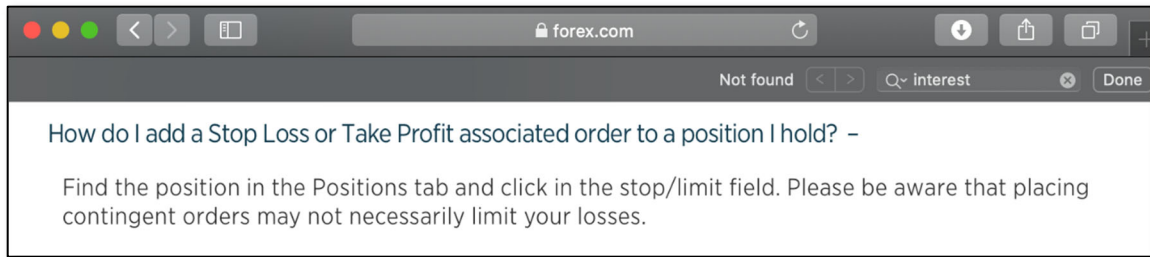
should be executed, executes it through said transaction server.	
Claim 3	
3. A system for trading currencies over a computer network, comprising:	See preamble to Claim 1.
(a) a server front-end in communication with said computer network;	See Claim 1(a).
(b) a database;	See Claim 1(b).
(c) a transaction server in communication with said server front-end and with said database	See Claim 1(c).
(d) a rate server in communication with said server front-end; and	See Claim 1(d).
(e) a pricing engine in communication with said rate server; and further comprising a trade manager in communication with said transaction server and said database, wherein said trade manager comprises a take-profit daemon that (a) continuously checks whether take-profit orders should be executed, and (b) if a take-profit order should be executed, executes it through said transaction server.	<p>See Claim 1(e). <i>See also:</i></p> 

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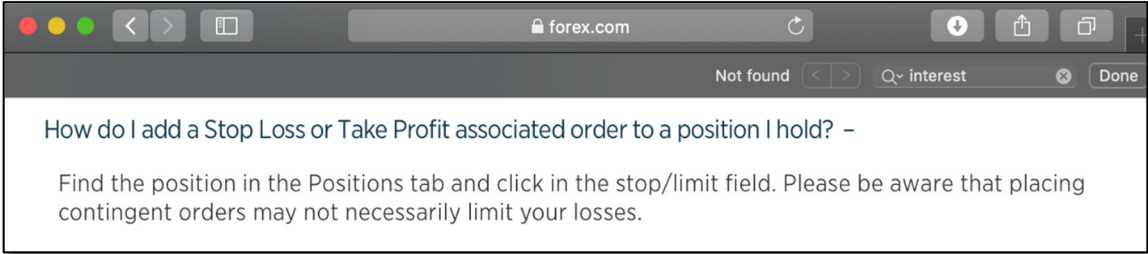
Claim 4	
4. A system for trading currencies over a computer network, comprising:	See preamble to Claim 1.
(a) a server front-end in communication with said computer network;	See Claim 1(a).
(b) a database;	See Claim 1(b).
(c) a transaction server in communication with said server front-end and with said database;	See Claim 1(c).
(d) a rate server in communication with said server front-end; and	See Claim 1(d).
(e) a pricing engine in communication with said rate server; and further comprising a trade manager in communication with said transaction server and said database, wherein said trade manager comprises a limit-order daemon that (a) continuously checks whether limit orders should be executed, and (b) if a limit order should be executed, executes it through said transaction server.	<p>See Claim 1(e). <i>See also:</i></p> 

Exhibit D

	<div><div>Orders (4) ×</div><div><div>PositionOrderMore</div><div>XLXS ⌵</div></div><table><thead><tr><th>MARKET</th><th></th><th>ORDER</th><th>ORDER PRICE</th><th>CURRENT PRICE</th><th>DISTANCE AWAY</th><th>LIMIT</th><th>STOP</th><th>ORDER TYPE</th><th>DATE CHANGED</th><th></th></tr></thead><tbody><tr><td>EUR/USD</td><td>▼</td><td>Sell</td><td>2,000</td><td>1.10000</td><td>1.08082</td><td>0.01918</td><td>Set</td><td>Set</td><td>GTC</td><td>06/05/2020 11:20:00</td><td>Delete</td></tr><tr><td>AUD/USD</td><td>▼</td><td>Buy</td><td>2,000</td><td>0.64000</td><td>0.64211</td><td>0.00211</td><td>Set</td><td>Set</td><td>GTC</td><td>06/05/2020 12:04:41</td><td>Delete</td></tr><tr><td>AUD/USD</td><td>▼</td><td>Buy</td><td>2,000</td><td>0.64000</td><td>0.64211</td><td>0.00211</td><td>Set</td><td>Set</td><td>GTC</td><td>06/05/2020 12:05:22</td><td>Delete</td></tr><tr><td>USD/CAD</td><td>▼</td><td>Buy</td><td>1,000</td><td>1.41200</td><td>1.41274 ↗</td><td>0.00074</td><td>Set</td><td>Set</td><td>GTC</td><td>06/05/2020 12:56:21</td><td>Delete</td></tr></tbody></table></div> <div><div>Active Orders</div><table><thead><tr><th>Market</th><th>Market Expiry</th><th>Buy/Sell</th><th>Order Type</th><th>Quantity</th><th>Order Price</th><th>Current Price</th><th>Distance Away</th><th>Stop</th><th>Limit</th><th>Expiry</th><th>Order ID</th><th>Date/Time</th><th>Basis</th><th>ParentID</th><th>Expiry Date</th></tr></thead><tbody><tr><td>EUR/USD</td><td></td><td>Sell</td><td>Limit</td><td>2,000</td><td>1.1</td><td>1.08059</td><td>0.01941</td><td></td><td></td><td>Good Till Cancelled</td><td>732593048</td><td>2020-05-06 11:20:00 AM</td><td>Single</td><td></td><td></td></tr><tr><td>AUD/USD</td><td></td><td>Buy</td><td>Limit</td><td>2,000</td><td>0.64</td><td>0.64187</td><td>0.00187</td><td></td><td></td><td>Good Till Cancelled</td><td>732606240</td><td>2020-05-06 12:04:41 PM</td><td>Single</td><td></td><td></td></tr><tr><td>AUD/USD</td><td></td><td>Buy</td><td>Limit</td><td>2,000</td><td>0.64</td><td>0.64187</td><td>0.00187</td><td></td><td></td><td>Good Till Cancelled</td><td>732606441</td><td>2020-05-06 12:05:22 PM</td><td>Single</td><td></td><td></td></tr><tr><td>AUD/USD</td><td></td><td>Sell</td><td>Associated Stop</td><td>4,000</td><td>0.641</td><td>0.64166</td><td>0.00066</td><td></td><td></td><td>Good Till Cancelled</td><td>732608284</td><td>2020-05-06 12:13:09 PM</td><td>Single</td><td></td><td></td></tr><tr><td>EUR/USD</td><td></td><td>Sell</td><td>Associated Stop</td><td>2,000</td><td>1.07977</td><td>1.08059</td><td>0.00082</td><td></td><td></td><td>Good Till Cancelled</td><td>732614372</td><td>2020-05-06 12:47:57 PM</td><td>Single</td><td></td><td></td></tr><tr><td>EUR/USD</td><td></td><td>Sell</td><td>Associated Li...</td><td>2,000</td><td>1.08157</td><td>1.08059</td><td>0.00098</td><td></td><td></td><td>Good Till Cancelled</td><td>732615208</td><td>2020-05-06 12:47:57 PM</td><td>Single</td><td></td><td></td></tr><tr><td>USD/CAD</td><td></td><td>Buy</td><td>Limit</td><td>1,000</td><td>1.412</td><td>1.41346</td><td>0.00146</td><td></td><td></td><td>Good Till Cancelled</td><td>732616602</td><td>2020-05-06 12:56:22 PM</td><td>Single</td><td></td><td></td></tr></tbody></table></div>	MARKET		ORDER	ORDER PRICE	CURRENT PRICE	DISTANCE AWAY	LIMIT	STOP	ORDER TYPE	DATE CHANGED		EUR/USD	▼	Sell	2,000	1.10000	1.08082	0.01918	Set	Set	GTC	06/05/2020 11:20:00	Delete	AUD/USD	▼	Buy	2,000	0.64000	0.64211	0.00211	Set	Set	GTC	06/05/2020 12:04:41	Delete	AUD/USD	▼	Buy	2,000	0.64000	0.64211	0.00211	Set	Set	GTC	06/05/2020 12:05:22	Delete	USD/CAD	▼	Buy	1,000	1.41200	1.41274 ↗	0.00074	Set	Set	GTC	06/05/2020 12:56:21	Delete	Market	Market Expiry	Buy/Sell	Order Type	Quantity	Order Price	Current Price	Distance Away	Stop	Limit	Expiry	Order ID	Date/Time	Basis	ParentID	Expiry Date	EUR/USD		Sell	Limit	2,000	1.1	1.08059	0.01941			Good Till Cancelled	732593048	2020-05-06 11:20:00 AM	Single			AUD/USD		Buy	Limit	2,000	0.64	0.64187	0.00187			Good Till Cancelled	732606240	2020-05-06 12:04:41 PM	Single			AUD/USD		Buy	Limit	2,000	0.64	0.64187	0.00187			Good Till Cancelled	732606441	2020-05-06 12:05:22 PM	Single			AUD/USD		Sell	Associated Stop	4,000	0.641	0.64166	0.00066			Good Till Cancelled	732608284	2020-05-06 12:13:09 PM	Single			EUR/USD		Sell	Associated Stop	2,000	1.07977	1.08059	0.00082			Good Till Cancelled	732614372	2020-05-06 12:47:57 PM	Single			EUR/USD		Sell	Associated Li...	2,000	1.08157	1.08059	0.00098			Good Till Cancelled	732615208	2020-05-06 12:47:57 PM	Single			USD/CAD		Buy	Limit	1,000	1.412	1.41346	0.00146			Good Till Cancelled	732616602	2020-05-06 12:56:22 PM	Single		
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Exhibit D

(e) a pricing engine in communication with said rate server, wherein said pricing engine is operable to compute currency exchange rates based on: (a) data obtained from external rate sources; and (b) market directional movement and volatility.

See Claim 1(e). See also:

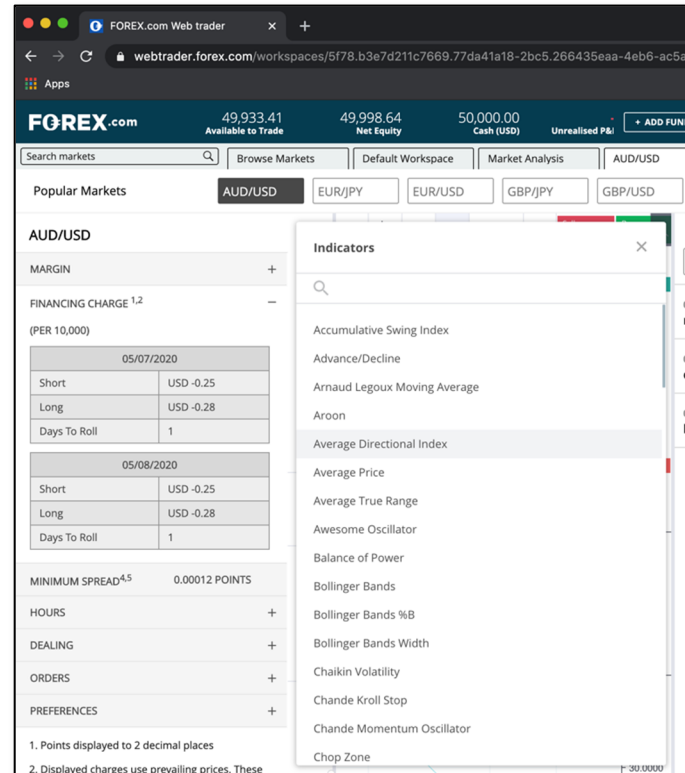


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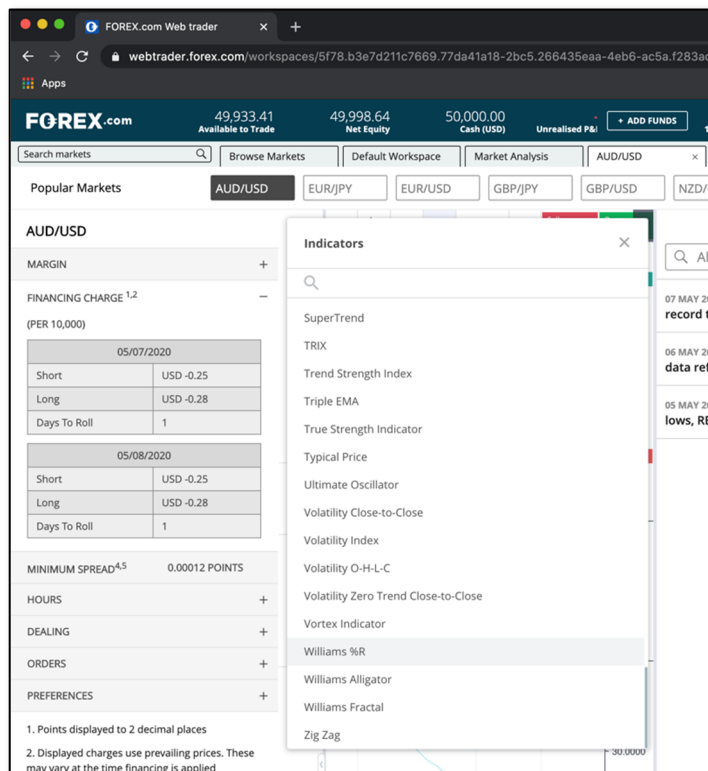


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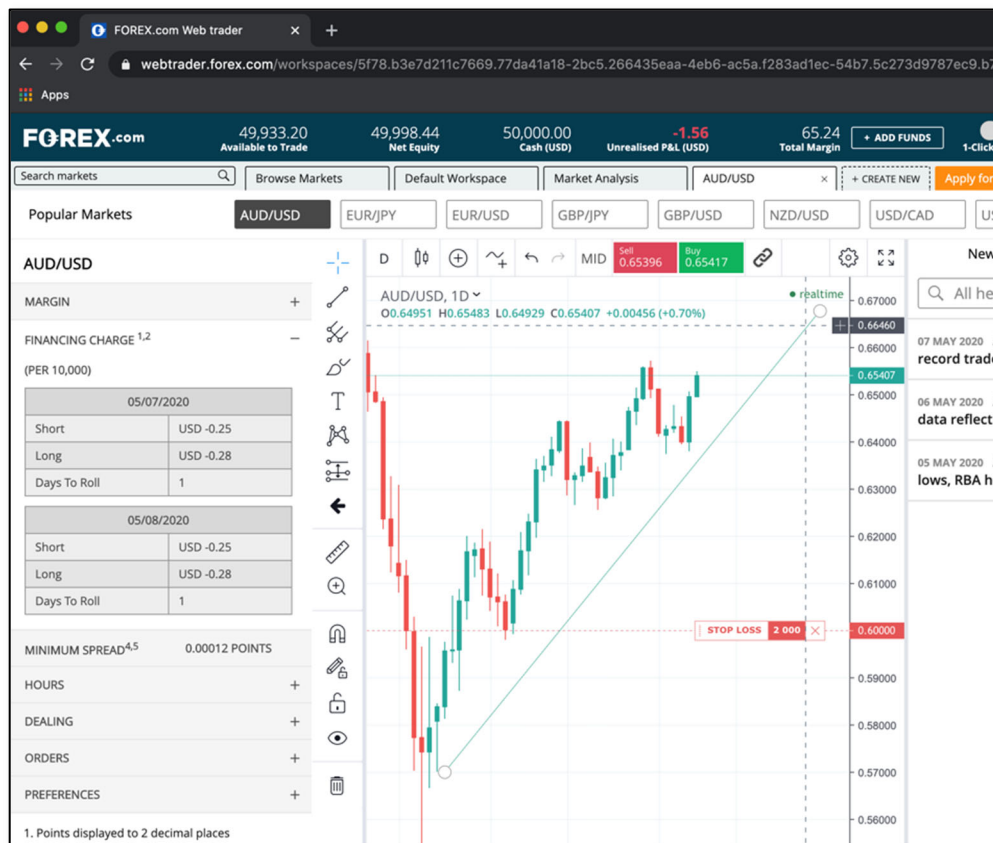


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Claim 6

6. A system as in claim 5, wherein said pricing engine is further operable to compute currency exchange rates based on positions held by said system.

See Claim 5. See also:

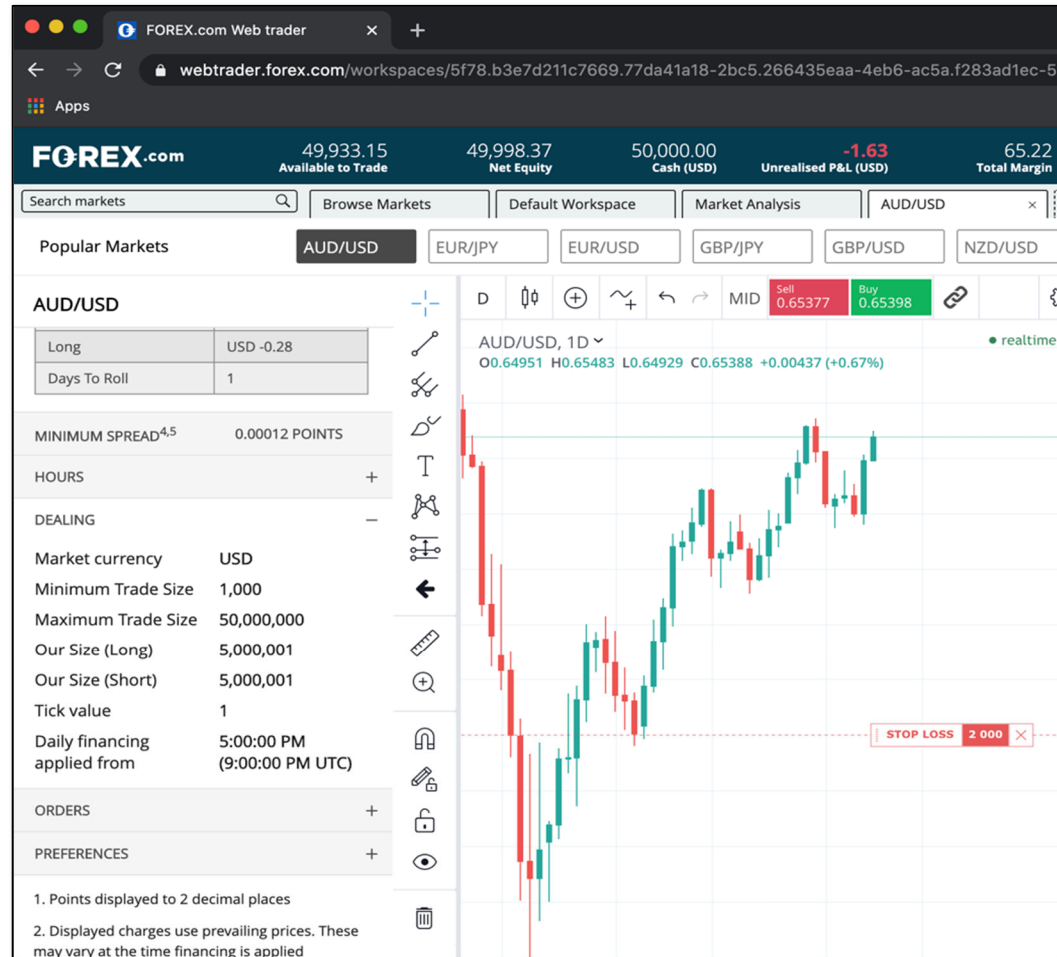


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Claim 7	
7. A system for trading currencies over a computer network, comprising	See preamble to Claim 1.
(a) a server front-end in communication with said computer network;	See Claim 1(a).
(b) a database;	See Claim 1(b).
(c) a transaction server in communication with said server front-end and with said database;	See Claim 1(c).
(d) a rate server in communication with said server front-end; and	See Claim 1(d).
(e) a pricing engine in communication with said rate server; further comprising a hedging engine in communication with said transaction server, wherein said hedging engine is operable to perform at least two of the following calculations: (a) calculate a total amount of home currency appearing in all open positions; (b) calculate an out-of-equilibrium exposure; (c) calculate a new potential net exposure; (d) calculate an equilibrium position; (e) calculate boundaries of possible exposures; (f) calculate values for a pair of quoting	See Claim 1(e) and 5 regarding pricing engine component. See Exhibit F showing GAIN's product documentation relating to margin and leverage. Margin and hedging are closely related concepts. Margin is related to the concept of lending traders the platform's money, typically without security, and involves calculations of the risk of a trader's account positions to GAIN for that trader. Hedging is related to the concept of identifying account positions for many traders on GAIN's product in bulk, and offsetting risks that those bulk positions may expose GAIN to by making corresponding transactions with other financial entities. In other words, many of the calculations that GAIN makes for an individual trader's account, will be rolled up to use in GAIN's internal hedging engine. GAIN hedges the exposure that its customers' trades create because many of its customer accounts are not secured against loss. Thus, GAIN's hedging engine is the back-end software component, which is not visible in screenshots but will be visible on an inspection of GAIN's source code and associated documentation, which performs operations useful to GAIN in hedging such exposure. Upon information and belief, GAIN's hedging engine

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functions; and (g) calculate an average price and an average spread.

determines when to trade with one of GAIN's backend partners. The hedging engine is not readily apparent to a trader using the forex.com platform. Instead, the hedging engine monitors the positions in all traders' accounts, along with trading activity, and market direct and volatility to determine when to execute backend trades.

Therefore, on information and belief, GAIN's product comprises:

- (1) a **hedging engine in communication with said transaction server, wherein said hedging engine is operable to perform at least two of the following calculations**, which is a back-end component not visible in screenshots of GAIN's product, but will be visible on an inspection of GAIN's source code, and which hedges GAIN's exposure to market fluctuations based on GAIN's customer's trades, and is in communication with the transaction server so that it may monitor ongoing transactions and changes in the positions of GAIN and its traders;
- (2) the hedging engine does and must **(a) calculate a total amount of home currency appearing in all open positions**; for the purpose of identifying the amount of home currency that must be hedged against;
- (3) the hedging engine does and must **(b) calculate an out-of-equilibrium exposure**; for the purpose of identifying those currencies where GAIN's traders have taken net short (or long) positions in particular currencies so that GAIN's hedging engine may hedge against them;
- (4) the hedging engine does and must **(c) calculate a new potential net exposure**, for the purpose of understanding what GAIN's new exposure may be after a hedging transaction is executed (e.g., GAIN buying or selling some currency that its traders are short or long on, to reduce GAIN's exposure to fluctuations in the value of that currency);
- (5) the hedging engine does and must **(d) calculate an equilibrium position**, so that GAIN's hedging engine can decide how much of a currency to recommend to buy or sell so as to reduce or eliminate GAIN's exposure to an out of equilibrium net position;
- (6) the hedging engine does and must **(e) calculate boundaries of possible exposures**, so that when hedging transactions are costly or take time, the hedging engine may predict future expected exposures based on predicted future actions of GAIN's traders or the movements of markets;

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- (7) the hedging engine does and must **(f) calculate values for a pair of quoting functions**, at a minimum, so that GAIN's hedging engine may output values for a hedging operation to buy one currency in a currency pair, or to sell the other currency in that currency pair; and
- (8) the hedging engine does and must **(g) calculate an average price and an average spread**, at a minimum, for the purpose of making estimates as to the volatility and future price(s) or exposure(s) of the currency pairs traded by GAIN's customers, and/or for the purpose of simplifying other calculations by using average(s) rather than many individual prices.

See also:

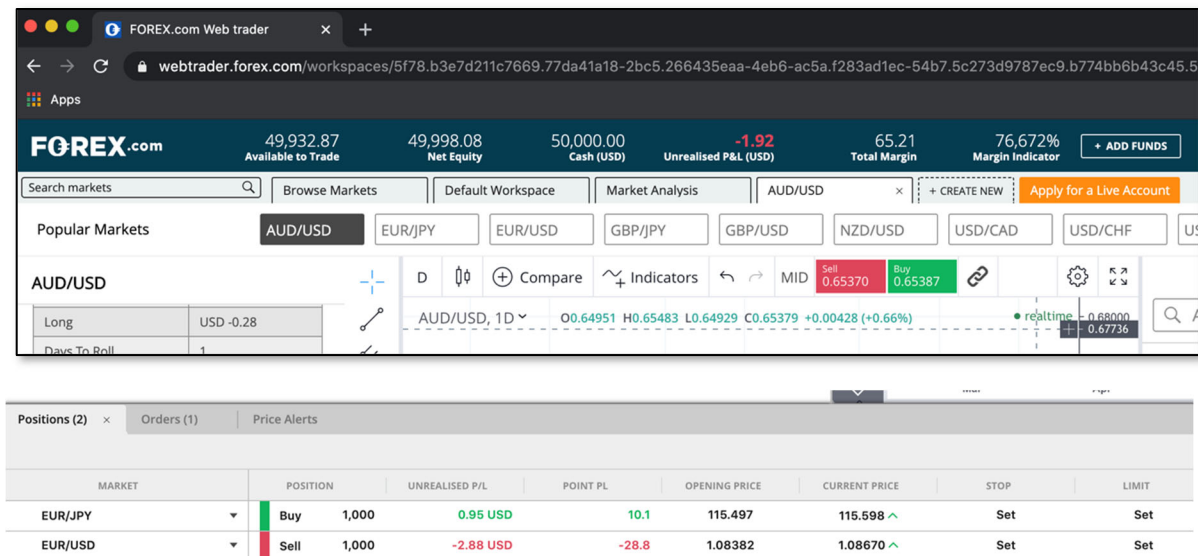


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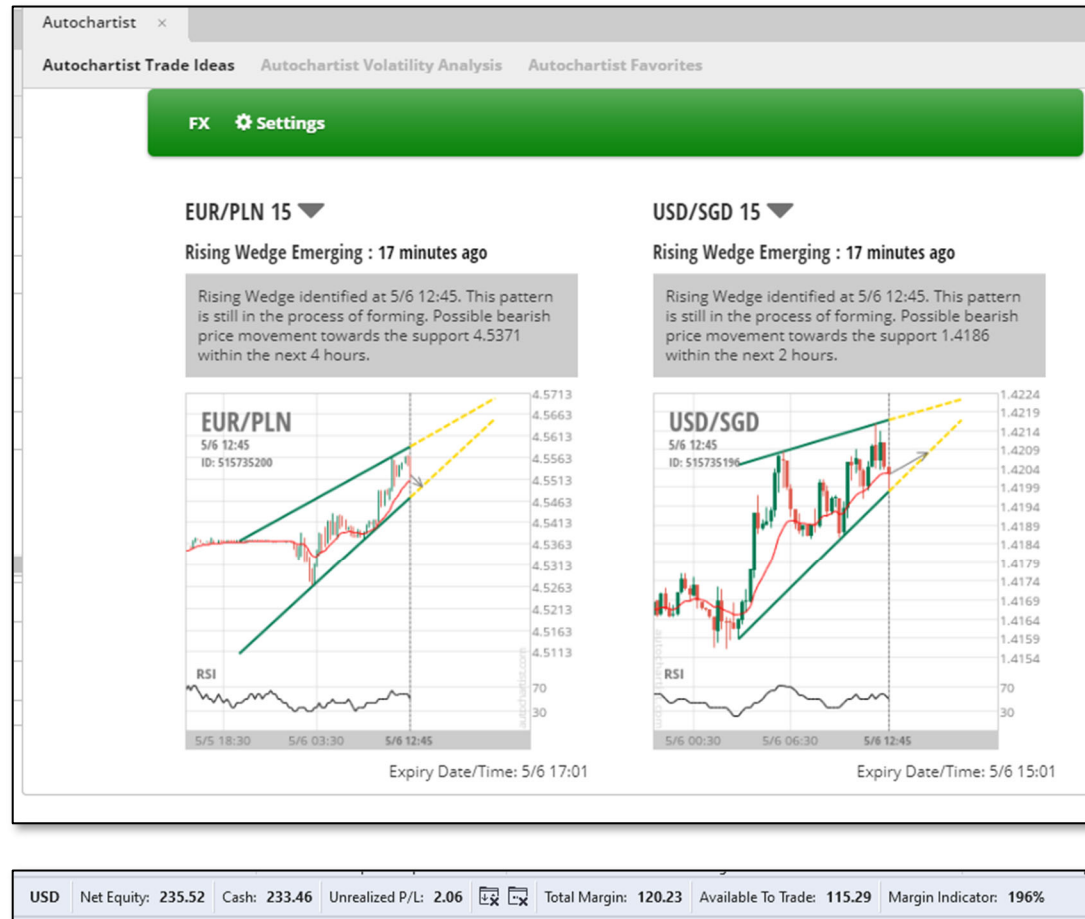


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Claim 8

8. A system as in claim 6, wherein said positions are managed based on one or more trading models.

See Claim 6. See also:

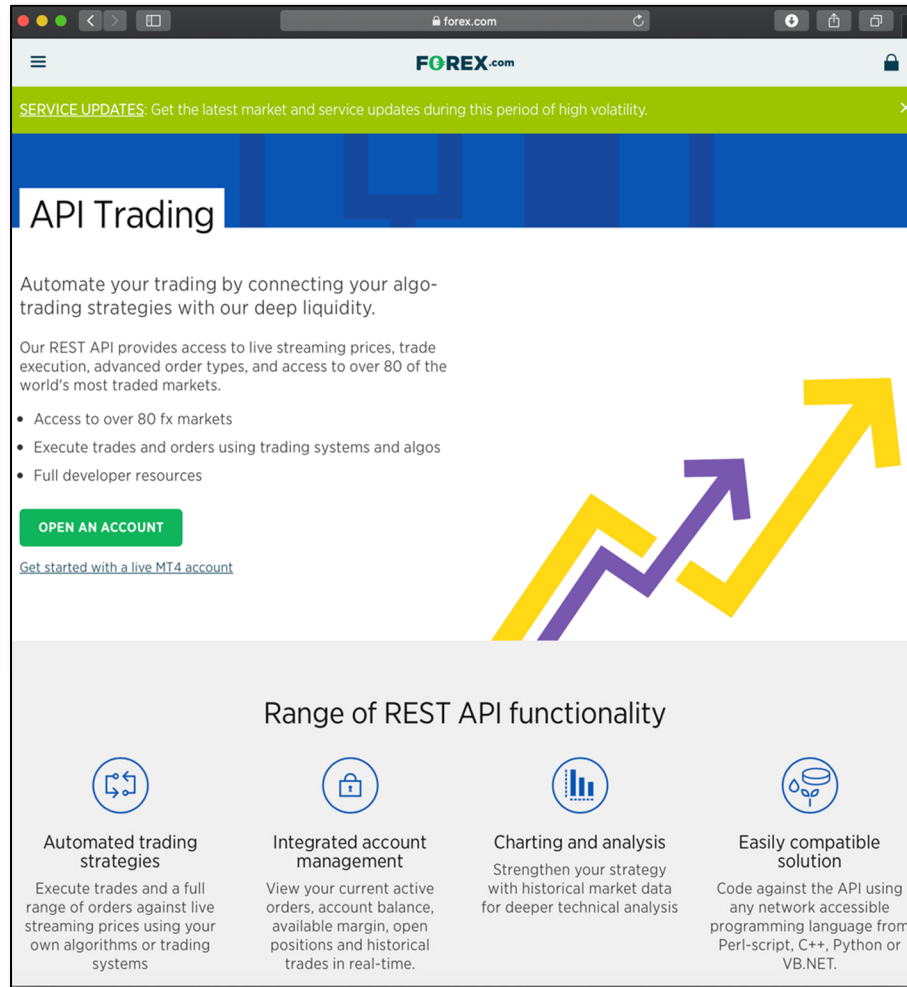


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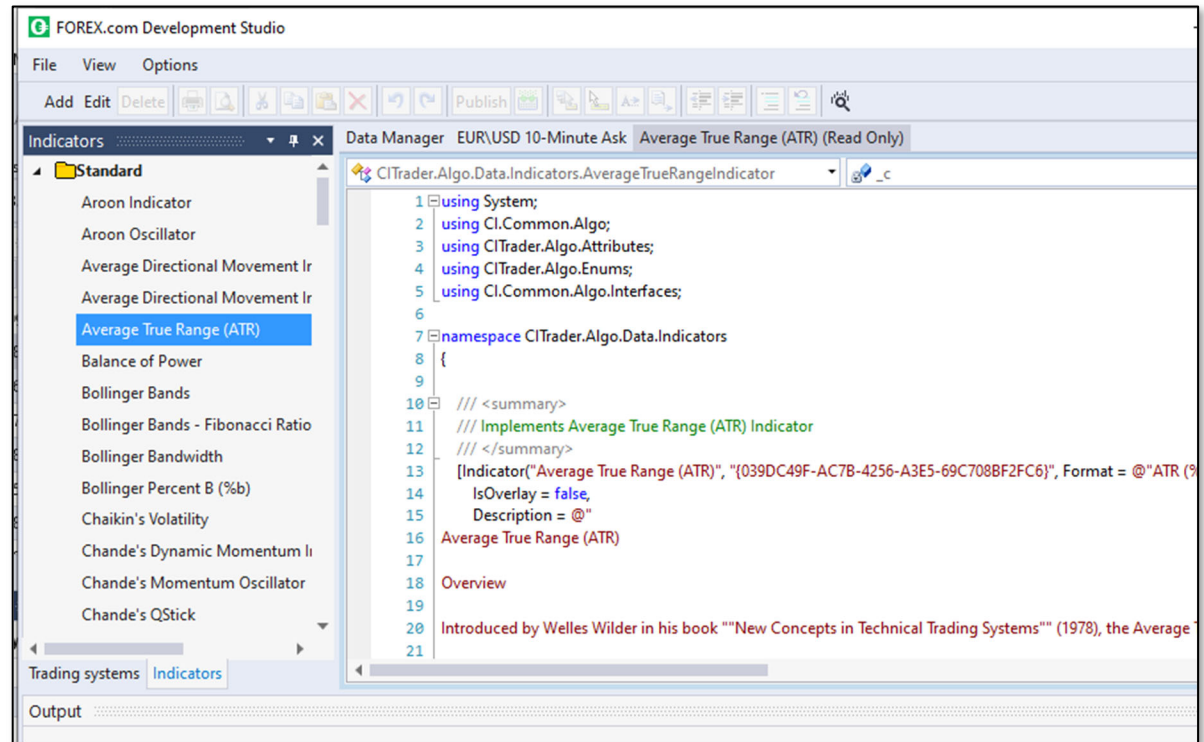
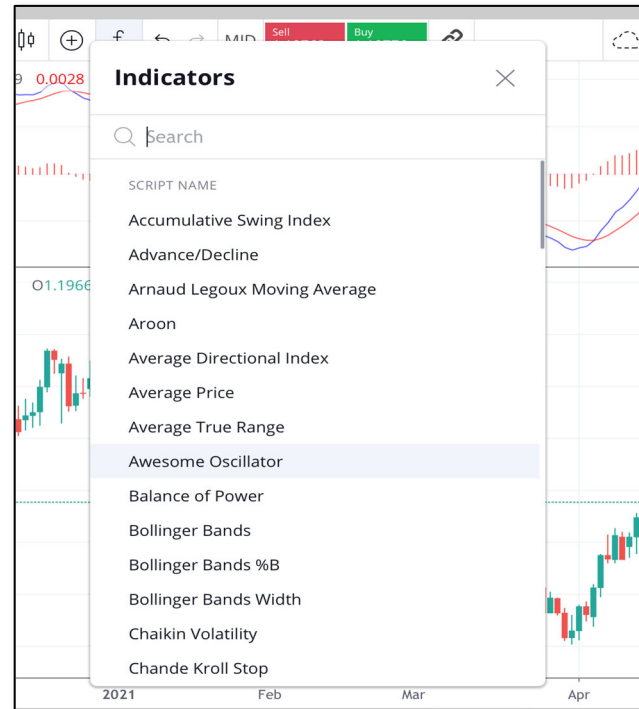


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Claim 9

9. A system as in claim 8, wherein at least one of said one or more trading models comprises: (a) a price collector component; (b) a price filter component; (c) a price database component; (d) a gearing calculator component; (e) a deal acceptor component; and (f) a book-keeper component.

See Claim 8. See Also:



The above screenshot shows listings of GAIN's product "indicators," which are also trading models.

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The above screenshot shows the operation and display of a trading model / indicator (MACD) on GAIN's product.

"Trading models" are an expected feature of hedging and/or a hedging engine (See Claim 7(e)). Because GAIN's product hedges against customer exposure, the product must, on information and belief, model the effects of various hedging transactions. This is another example of a trading model that, while not itself visible in screenshots of GAIN's product, may be inferred

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from the operation of GAIN's product and its financial reports, and will be visible on inspection of GAIN's source code and associated documentation.

The trading models provided and/or used by GAIN's product comprise various components as claimed here. While the output of the trading models themselves may sometimes be apparent in screenshots of the product (see above), the claimed components themselves are not visible features of the product—they are software components, all of which interact with GAIN's product and its back-end components, and some of which are back-end components themselves and the precise functionality will only be revealed by review of GAIN's source code and associated documentation.

Upon information and belief, each claimed component performs various operations for the purpose of enabling the models or indicators available to GAIN's customers. Thus, knowledge of the existence of the trading models, as well as knowledge of the existence of GAIN's hedging engine and operations, allows OANDA to infer the existence of the claimed components, which it alleges are all present in GAIN's product:

(a) a price collector component – this component collects price quotes from data feeds and is evidenced by the use of price data in the trading models;

(b) a price filter component – this component receives the collected price quotes and filters them to send to the price database and/or gearing calculator, and is evidenced by the apparent lack of erroneous prices in the display of price information;

(c) a price database component – this component stores price quotes for later retrieval or display and is evidenced by the ability of the models to show historical price data and model outputs;

(d) a gearing calculator component – this component specifies the recommended exposure size based on computations of the model or indicator; and is evidenced by various indications in certain trading models, as well as the recommendations of GAIN's hedging engine to hedge customer exposures (*see also* Claim 7(e));

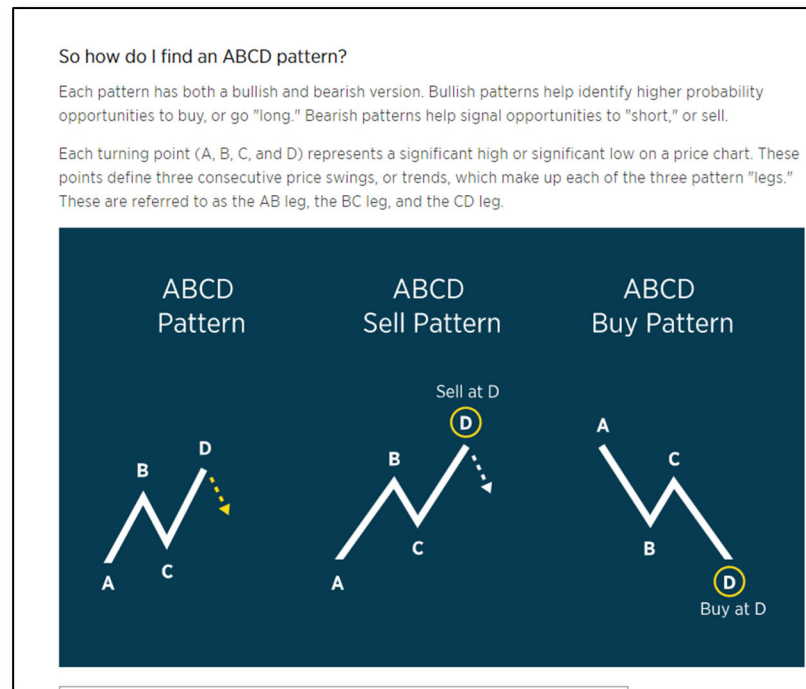
(e) a deal acceptor component – this component throttles the recommendations of the gearing calculator component to avoid performing too many trades in a short period, which increases

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risk. Because both customer and hedging transactions are costly to make, on information and belief, GAIN uses a deal acceptor component to reduce the numbers of unnecessary trades to achieve model, hedging, or other goals;

(f) a book-keeper component – the book keeper component evaluates trading model statistics and/or keeps track of deals that have been made. The book-keeper component is evidence by the fact that GAIN's trading models (for customers or for hedging) do not continue to recommend (or execute) trades that have already been recommended (or executed), rather the executed trades are stored in the book keeper component so that the same recommendation isn't duplicated.

See also:

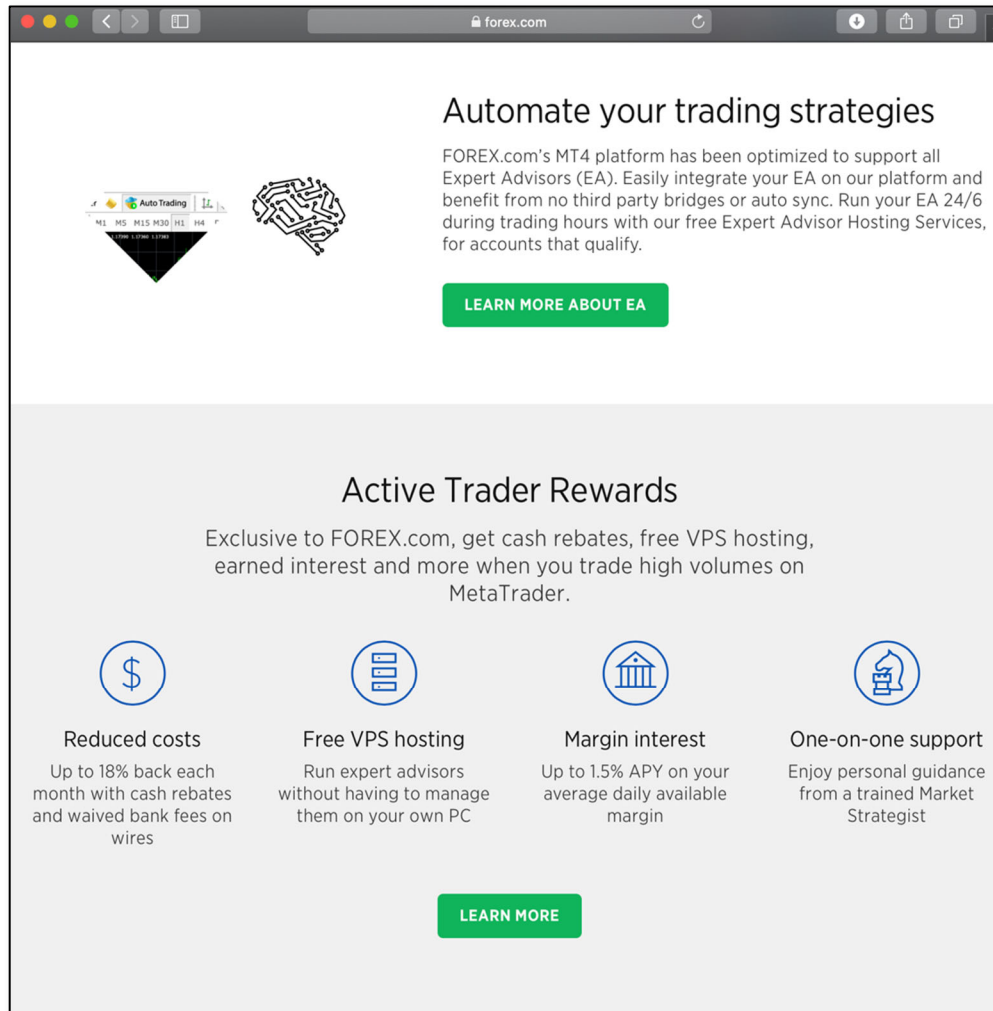


<https://www.forex.com/en-us/education/education-themes/technical-analysis/abcd-pattern/>
(accessed May 8, 2020).

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	Upon information and belief, the forex.com trading platform comprises back-end functionalities that computers exchange through trading models that use each of the components identified in Claim 9 of the '336 Patent.
Claim 10	
10. A system as in claim 8, wherein at least one of said one or more trading models comprises: (a) a price collector component; (b) a price filter component; (c) a price database component; (d) a gearing calculator component; (e) a deal acceptor component; (f) an opportunity catcher component; and (g) a book-keeper component	<p>Upon information and belief, the forex.com trading platform comprises back-end functionalities, not visible in screenshots of GAIN's product but which will be visible on inspection of GAIN's source code, that compute exchange through trading models that use each of the components identified in Claim 10 of the '336 Patent, which OANDA alleges are all present in GAIN's product:</p> <p>(a) a price collector component – See Claim 9.</p> <p>(b) a price filter component – See Claim 9.</p> <p>(c) a price database component – See Claim 9.</p> <p>(d) a gearing calculator component – See Claim 9.</p> <p>(e) a deal acceptor component – See Claim 9.</p> <p>(f) an opportunity catcher component - The opportunity catcher component sends a signal to the trader to execute the recommended trade. Thus, after coming up with a recommendation for either a customer or for GAIN's internal hedging, the opportunity catcher components signal a trader—either a customer or a different software component—to execute the trade, at a particular time, and at a particular price. The existence of this component may be inferred because without signals to execute trades, the recommendations created and approved by the other components (e.g., gearing calculator, deal acceptor, etc.) would be ignored and would not result in profits or risk reduction.</p> <p>(g) a book-keeper component – See Claim 9.</p> <p><i>See also:</i></p>

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The screenshot displays the FOREX.com website. The top section, titled "Automate your trading strategies", features a small image of the MetaTrader 4 (MT4) platform interface with "Auto Trading" enabled, alongside a brain icon composed of circuitry. The text explains that FOREX.com's MT4 platform is optimized for Expert Advisors (EAs) and offers free Expert Advisor Hosting Services for qualifying accounts. A green button labeled "LEARN MORE ABOUT EA" is positioned below the text.

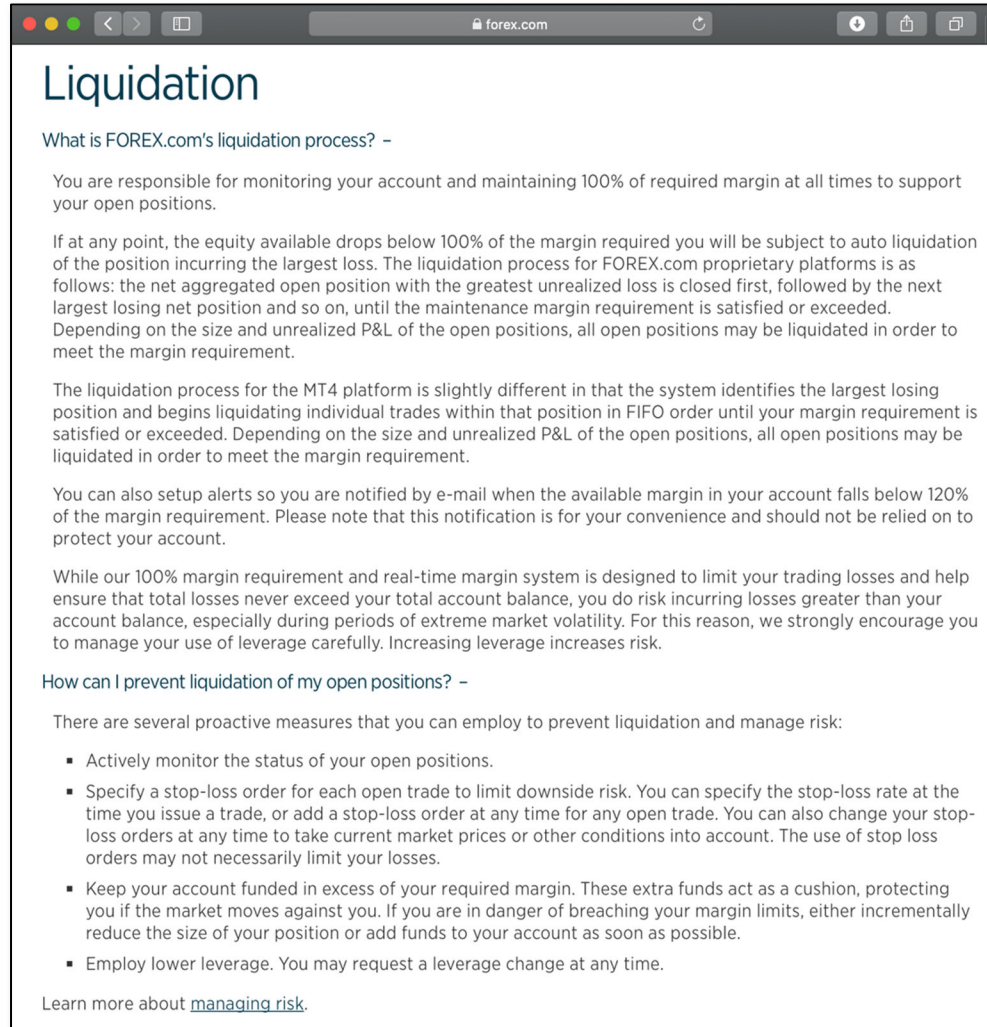
The second section, titled "Active Trader Rewards", is set against a light gray background. It states that users exclusive to FOREX.com can receive cash rebates, free VPS hosting, and earned interest when trading high volumes on MetaTrader. Below this text are four icons in blue circles, each representing a reward: a dollar sign for reduced costs, a server rack for free VPS hosting, a bank building for margin interest, and a chess knight for one-on-one support. Each icon is accompanied by a title and a brief description of the benefit.

At the bottom of the "Active Trader Rewards" section is a green button labeled "LEARN MORE".

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Claim 11	
11. A system for trading currencies over a computer network, comprising:	<i>See Claim 1.</i>
(a) a server front-end in communication with said computer network;	<i>See Claim 1(a).</i>
(b) a database;	<i>See Claim 1(b).</i>
(c) a transaction server in communication with said server front-end and with said database;	<i>See Claim 1(c).</i>
(d) a rate server in communication with said server front-end; and	<i>See Claim 1(d).</i>
(e) a pricing engine in communication with said rate server; further comprising a margin control manager in communication with said transaction server and said database, wherein said margin control manager is operable to monitor on a tick-by-tick basis margin requirements of accounts and on said tick-by-tick basis liquidate holdings as needed to maintain specified margins.	<i>See Claim 1(e). See also:</i>

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Liquidation

What is FOREX.com's liquidation process? –

You are responsible for monitoring your account and maintaining 100% of required margin at all times to support your open positions.

If at any point, the equity available drops below 100% of the margin required you will be subject to auto liquidation of the position incurring the largest loss. The liquidation process for FOREX.com proprietary platforms is as follows: the net aggregated open position with the greatest unrealized loss is closed first, followed by the next largest losing net position and so on, until the maintenance margin requirement is satisfied or exceeded. Depending on the size and unrealized P&L of the open positions, all open positions may be liquidated in order to meet the margin requirement.

The liquidation process for the MT4 platform is slightly different in that the system identifies the largest losing position and begins liquidating individual trades within that position in FIFO order until your margin requirement is satisfied or exceeded. Depending on the size and unrealized P&L of the open positions, all open positions may be liquidated in order to meet the margin requirement.

You can also setup alerts so you are notified by e-mail when the available margin in your account falls below 120% of the margin requirement. Please note that this notification is for your convenience and should not be relied on to protect your account.

While our 100% margin requirement and real-time margin system is designed to limit your trading losses and help ensure that total losses never exceed your total account balance, you do risk incurring losses greater than your account balance, especially during periods of extreme market volatility. For this reason, we strongly encourage you to manage your use of leverage carefully. Increasing leverage increases risk.

How can I prevent liquidation of my open positions? –

There are several proactive measures that you can employ to prevent liquidation and manage risk:

- Actively monitor the status of your open positions.
- Specify a stop-loss order for each open trade to limit downside risk. You can specify the stop-loss rate at the time you issue a trade, or add a stop-loss order at any time for any open trade. You can also change your stop-loss orders at any time to take current market prices or other conditions into account. The use of stop loss orders may not necessarily limit your losses.
- Keep your account funded in excess of your required margin. These extra funds act as a cushion, protecting you if the market moves against you. If you are in danger of breaching your margin limits, either incrementally reduce the size of your position or add funds to your account as soon as possible.
- Employ lower leverage. You may request a leverage change at any time.

Learn more about [managing risk](#).